THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY.

[NINTH SERIES.]

No. 32. AUGUST 1920.

## XXIII.—*Notes on various African and Asiatic Species of* Hapalochrus, *Er., with an Account of their accessory ♂-characters* [*Coleoptera*]. By G. C. Champion, F.Z.S.

[Plate VIII.*]

This paper contains notes on all the African and Asiatic species of the Melyrid-genus *Hapalochrus* represented in the British Museum in London and in the Congo Museum at Tervueren, supplemented by a few others lent me by Dr. Sjöstedt (including types of Bourgeois), Dr. Gestro, Dr. Péringuey, and Prof. Poulton. The material from the Belgian Congo, kindly communicated by M. Schouteden, consists of upwards of 3000 examples (including various types of Pic and specimens named by him), and that belonging to the British Museum (including types of Murray and Gorham) is from various parts of Africa—mainly from the vicinity of the Great Lakes and Uganda, collected by Dr. Neave, and a very interesting paired series of numerous species obtained by the late H. C. Dollman in N. Rhodesia,—India, the Malayan Region, and Arabia.

The identification of some of the named *Hapalochri* from description alone has proved to be impossible in many cases when the ♀ only was known to the author, or when the

* [The Plate will be published with the concluding part of the article.]

♂-characters were so briefly noted that they would apply equally well to several distinct species *. In consequence of this, several forms are here treated as new which may have to be sunk as synonyms when types can be compared. The ♀ ♀, moreover, are frequently indistinguishable *inter se* (as in certain *Malachius*, *Henicopus*, &c.) in the absence of ♂ ♂ from the same localities. The accessory ♂-characters in the antennæ, legs, &c., however, are so well marked that there is not very much difficulty in distinguishing the species when examples of that sex are available for examination. The following external marks of distinction have been observed in the males: (1) antennæ—flabellate, pectinate, serrate, or subfiliform; (2) head—usually as in ♀, rarely excavate (*H. clavicornis*) or with the epistoma tumid and flavescent (*H. abyssinicus*, &c.); (3) anterior trochanters (described as coxæ by Pic)—toothed, or simple as in ♀; (4) anterior femora—usually simple as in ♀, rarely toothed at the middle or base; (5) anterior tibiæ—lobed, dilated, or angulate at about the middle, or simply sinuate; (6) anterior tarsal joint 2—usually produced above over the base or more of joint 3 (sometimes broadly so and nigro-pectinate at tip, sometimes narrowly and claw-like), rarely simple as in ♀ †; (7) intermediate trochanters—usually simple, rarely (two Eastern or Indian forms) scaphiform or lobed; (8) intermediate femora—usually simple, sometimes angulate about the middle, or with a basal or median excavation or fovea beneath; (9) intermediate tibiæ—in some species greatly inflated, and deeply excavate and lamellate, toothed, or penicillate on their inner aspect, in others broadly, subtriangularly dilated, and more or less distinctly appendiculate or lobed near the inner apical angle, in others again moderately thickened, sinuate, or simple. In addition to above-mentioned characters, the head, antennæ, prothorax, or legs are also sometimes differently coloured in the two sexes, and in a few species (*H. amplipennis*, &c.) the wings are reduced in size or rudimentary in the females, these insects having inflated elytra. The females of certain African forms

* The *Hapalochri* named by Pic in his "Diagnoses préliminaires" ('L'Echange,' xxvii. p. 123, 1911), and in his "Malacodermes Africains" (Mélanges exot.-entom. xxxi. pp. 10, 11, Oct. 1919), issued "pour prendre date," have no claim for recognition, some of the descriptions being totally inadequate.

† Bourgeois included various African forms under this section (*Paratinus*), two only of them, *H. amplipennis* and *H. modestus*, really belonging to it, one at least of the others having the second tarsal joint produced above.

[Heterolaius, gen. nov.] referred to *Laius*, Guér.—*L. inflaticornis*, Fairm. [type], *L. bourgeoisi*, Gestro, and *L. latipennis*, *violaceipennis*, and *spinicoxis*, Pic—are extremely like the same sex of various species of the present genus, but they are separable therefrom by the subequally elongated, narrow, second and third joints of the antennæ, these two joints being greatly dilated and subconnate, and the anterior tarsi simple, in the males. *Collops velutinus*, Gerst., from Zanzibar, type ♀ (1873), referred to *Hapalochrus* by Fairmaire in 1887, must be a true *Laius*. In the descriptions here given, the short node at the base of the second antennal joint is not counted as a true joint, the antennæ being treated as 10-jointed, as in *Laius* and *Collops*.

Amongst the African *Hapalochri* we find groups of species represented by *H. nobilis*, *sjöstedti*, *testaceicornis*, *appendicifer*, *amplipennis*, &c., respectively, with a common, abundant, primitive type of ♀, and a series of ♂ ♂ confined to particular localities with diverse, constant, differential characters, which, in the present state of our knowledge of these insects, must be regarded as of specific value.

### *Key to the African Species* *.

♂ ♂.

| | | |
|---|---|---|
| 1 | (22). Anterior tarsal joint 2 prolonged over 3, the apical portion sometimes broad and nigro-pectinate at tip, sometimes narrowed and claw-like. | |
| 2 | (3). Anterior tibiæ produced at the inner apical angle into a very long, curved, simple or asymmetrically bifurcate spine; antennæ flabellate: intermediate tibiæ greatly swollen; prothorax metallic (maculate in ♀ of No. 1); elytra maculate or unicolorous. [Subgen. Hapalochrops, Bourg.] ..... | Species 1, 2. |
| 3 | (2). Anterior tibiæ not produced at the inner apical angle. [Hapalochrus, Er., s. str.] | |
| 4 | (7). Elytra maculate; intermediate tibiæ greatly swollen, penicillate in No. 3. | |
| 5 | (6). Antennæ flabellate or pectinate (intermediate femora in No. 3 with a large, oval, metallic area beneath at base) ..... | Species 3, 4. |
| 6 | (5). Antennæ serrate; intermediate femora without fovea ..... | Species 5. |
| 7 | (4). Elytra not maculate. | |
| 8 | (9). Anterior femora toothed at middle (Nos. 6–10) or base (No. 11); intermediate tibiæ slender; antennæ pectinate..... | Species 6–11. |

* Males of *H. nobilis*, *cinerascens*, *caudatus*, *dollmani*, and *scabrosus* unknown; *H. dollmani* (No. 58) omitted from Table.

9 (8). Anterior femora unarmed; intermediate tibiæ slightly incrassate; antennæ pectinate .... Species 12.

10 (13). Intermediate tibiæ greatly thickened, convex externally, deeply excavate or sulcate within (and sometimes sinuously sulcate above), the upper or lower edge of the excavation lamellate, dentate, or penicillate: species large, robust.

11 (12). Epistoma flavescent, tumid (Nos. 13–15) or flattened (No. 16) ..... Species 13–16.

12 (11). Epistoma metallic (as in ♀) * ..... Species 17–21.

13 (10). Intermediate tibiæ more or less incrassate or widened, not lamellate or toothed, often lobed or appendiculate near inner apical angle.

14 (15). Apical joint of antennæ flattened and dilated; head excavate; intermediate tibiæ broad, angulate externally, appendiculate..... Species 22.

15 (14). Apical joint of antennæ undilated.

16 (17). Anterior femora with a small tooth at base; anterior trochanters toothed (except in Nos. 26–28); intermediate femora excavate at base beneath (except in Nos. 26, 27); intermediate tibiæ broad and appendiculate (except in Nos. 26, 28)..... Species 23–28.

17 (16). Anterior femora without basal tooth.

18 (21). Intermediate tibiæ broad, more or less distinctly appendiculate.

19 (20). Intermediate femora angulate; anterior trochanters toothed (except in No. 29) ..... Species 29–32.

20 (19). Intermediate femora not angulate (anterior femora penicillate at base in No. 35; anterior trochanters toothed in Nos. 33, 38; intermediate femora foveate at base beneath in No. 44; wings abbreviated in ♀ ♀ Nos. 33, 34) ..... Species 33–44.

21 (18). Intermediate tibiæ narrower, not appendiculate; intermediate femora not angulate (except in Nos. 45, 52, 55); anterior trochanters toothed in Nos. 45, 49, 52, 54 .... Species 45–57.

22 (1). Anterior tarsi simple; intermediate tibiæ broad, appendiculate. [Subgen. Paratinus, Ab.]

23 (24). Anterior trochanters toothed ..... Species 59-62.

24 (23). Anterior trochanters unarmed (wings abbreviated in ♀ ♀ Nos. 65–67) ..... Species 63–67.

### 1. *Hapalochrus sumtuosus.*

*Apalochrus sumtuosus*, Boh. Ins. Caffraria, i. p. 458 (♂ ♀) (1851).

*Hapalochrus sumtuosus*, Péring. Trans. S. Afr. Phil. Soc. vi. 2, p. 46 (1892).

*Hapalochrus* (*Hapalochrops*) *sumptuosus*, Bourg. in Sjöstedt's Kilimandjaro-Meru Exped. i. Abt. 7, No. 10, p. 130, t. 3. fig. 13 (♂) (1908).

---

* *H. opulentus*, Péring., belongs to this section.

*Hapalochrous sumptuosus* (♂), and vars. (♀) *nyassensis* and *signaticollis*, Pic, Mélanges exot.-entom. iv. pp. 2, 3 (Sept. 1912).
♀. *Apalochrus sumptuosus*, var. *reductus*, Pic, op. cit. xxxi. p. 10 (Oct. 1919).
Var.? *Apalochrus erichsonii*, Roth in Wiegmann's Archiv, 1851, 1, p. 120 (♂ ♀).
*Hapalochrus erichsonii*, Gestro, Ann. Mus. Genova, xxxv. p. 353 (♀) (1895).

♂. Antennæ long, flabellate from joint 4 onward; anterior femora stout; anterior tibiæ rapidly widening outward, slightly sinuate within, the inner apical angle produced into a long, curved, pointed spine, which extends outward beneath the first tarsal joint; anterior tarsal joint 1 elongate, stout, compressed, ciliate externally, 2 much shorter, broadly oval, convex above, concave beneath, extending over joint 3 to its apex, nigro-pectinate at the tip (Pl. VIII. fig. 7); intermediate femora stout, feebly curved; intermediate tibiæ (Pl. VIII. fig 7 *b*) slender at the base, enormously dilated, curved, and convex towards the apex above, deeply excavate and pilose towards the apex within and beneath.

♂. *Var.* 1. Anterior tibiæ (Pl. VIII. fig. 7) shorter and more swollen at the apex, the inner apical angle produced into a long, curved spine (as in the type of *H. sumtuosus*), the outer apical angle also produced into a short, curved, downwardly-directed tooth.

♂. *Var.* 2. Anterior tibiæ (Pl. VIII. fig. 7 *a*) with the inner apical angle produced into a rather broad, compressed, curved lobe, which extends outward beneath the first tarsal joint and bears a long inwardly-curved hook towards the apex externally (the lobe thus appearing asymmetrically bifurcate at the tip).

*Var.* ♀. Elytra entirely fulvous.

*Hab.* E. Africa, Caffraria (*types of Boheman*: ♂ ♀), Transvaal and Ovampoland (*sec. Péringuey*), Mashonaland (*H. B. Dobble*), Waterburg (*W. L. Distant*), Salisbury (*G. A. K. Marshall*: ♂ vars. 1, 2, ♀), Mwengwa in N.W. Rhodesia (*H. C. Dollman*), Chiromo in Nyasaland (*R. C. Wood*), Nyasaland S.W. of Lake Chilwa (*S. A. Neave*), Mkomasi, Tanganyika Territory (*A. Loveridge, in Mus. Oxon.*: ♂), Lake Ngami (*Mus. Brit., Mus. Oxon.*), Kilimandjaro (*Dr. Sjöstedt*), Arussi Galla in Abyssinia (*Bottego, in Mus. Genoa*: ♀), Eritrea (*sec. Bourgeois*).

A common insect in E. Africa, but not extending into the Congo Region. The anterior tibiæ of the ♂ exhibit three variations in the development of the very long curved apical spur, this being spiniform in the males described by

Boheman and Bourgeois, and in one of those from Salisbury, and another from Mkomasi before me, and broader and asymmetrically bifurcate in the 28 other males seen from Rhodesia, Lake Ngami, and Nyasaland. Some of the Salisbury examples (♂ ♀) have the metallic patches of the elytra longitudinally confluent, and in two females from the same locality the markings are altogether wanting. *H. erichsoni*, Roth, from Abyssinia, a ♀ of which determined by Dr. Gestro is before me, is probably synonymous with *H. sumtuosus*.

### 2. *Hapalochrus deformipes*.

*Hapalochrus* (*Hapalochrops*) *deformipes*, Bourg. in Sjöstedt's Kilimandjaro-Meru Exped. i. Abt. 7, No. 10, p. 132, t. 3. fig. 14 (♂) (1910).

♂. Characters as in typical *H. sumtuosus*, Boh.: the inner apical angle of the anterior tibiæ produced into a long, curved, outwardly-directed spine as in the males described by Boheman and Bourgeois.

*Hab.* E. Africa, Banks of the River Ngare na nyuki, Meru (*Dr. Sjöstedt*); Eritrea (*coll. Bourgeois*).

This insect, the unique type (♂) of which has been kindly forwarded for examination by Dr. Sjöstedt, is probably, as suggested by Bourgeois, a form of *H. sumtuosus* with the upper surface uniformly metallic. The ♂-characters are precisely similar. The ♀ with a metallic prothorax, from Amara, Eritrea, provisionally referred by the same author to *H. sumtuosus* (p. 132, nota), affords a connecting-link between the two forms, if it really belongs to this group?

### 3. *Hapalochrus longior*.

♂. *Hapalochrous longior*, Pic, Le Naturaliste, xxv. p. 81 (1903); Mélanges exot.-entom. iv. p. 2 (Sept. 1912).

♂. Epistoma testaceous, the oblique lateral portions almost smooth and somewhat tumid; antennæ long, feebly serrate; anterior tibiæ excavate towards the apex within, the apical portion somewhat thickened; anterior tarsal joints 1 and 2 thickened, subequal in length, 2 with a black comb at the tip; intermediate femora (Pl. VIII. fig. 9 *a*) with a large, oval, depressed, metallic area at the base beneath; intermediate tibiæ (Pl. VIII. figs. 9, 9 *a*) enormously thickened, rounded and convex externally, deeply excavate beneath, and abruptly emarginate before the apex within, the emargination

preceded by a long, matted, dentiform tuft of curled fulvous hairs and followed by a smaller tuft of similar hairs, these tufts arising from the cavernous lower surface.

*Var.* The testaceous lateral markings on the elytra extending inwards and forming an angulate median fascia, the subapical green fascia sometimes reduced to an irregular oblique green patch on the disc of each elytron.—?=*H. jansoni*, Pic, ♀ (1912).

*Hab.* W. Africa, Benguela, Congo, Gaboon (*Pic*), Agonë, Benin (*Abbé Menager*), Angola, Whydah (*Mus. Brit.*), Lagos in S. Nigeria (*J. A. de Gaye*), Cotonou in Dahomey, 70 miles W. of Lagos (*W. A. Lamborn*: v., vi. 1914: ♂ ♀: *Mus. Brit., Mus. Oxon.*), Tamsoo, Gold Coast (*Mus. Brit.*: ♂); Lambarene, French Congo (*L. Fea*: xi., xii. 1902: ♂ ♀: *Mus. Genoa*); Boma, Sassa, Tolo, Eala, Kundi, Lukolela, Kwamouth, Bas-Kasaï, Coquilhatville, &c., Belgian Congo (*Mus. Congo Belge*: ♂ ♀, and vars).

Numerous examples of this species are before me, including sixteen males, mostly belonging to the Congo, Genoa, or Oxford Museums: the variety (?=*H. jansoni*, Pic, type ♀) is represented by a ♀ from Dahomey and a ♂ from the Congo. The only ♂-character noted by Pic is the "simple antennæ." The testaceous anterior portion of the head is of course peculiar to that sex, the ♀ having the head entirely metallic.

### 4. *Hapalochrus nobilis.*

♀. *Apalochrus nobilis*, Er. Archiv für Naturg. 1843, 1, p. 226.
*Hapalochrous nobilis*, Pic, Mélanges exot.-entom. iv. (Sept. 1912).

*Hab.* W. Africa, Angola (*type of Erichson*), Onitsha in S. Nigeria (*J. A. de Gaye*: vii. 1910: ♀).

A ♀ from Nigeria in the British Museum agrees with the description of *A. nobilis*, except in having the antennæ, femora, and tarsi darker, a character of no importance in the present genus. This insect is extremely like *H. longior*, Pic, and has the elytra marked as in one of the forms of that species—metallic bluish-green, with a triangular patch at the middle of the sides and another at the apex testaceous; from which it is separable by the broader and more robust build, and the rugosely punctured sides of the prothorax. The ♂-characters may prove to be dissimilar from those of the allied *H. longior*, an insect also occurring in Angola.

### 5. *Hapalochrus festivus.*

♀. *Apalochrus festivus*, Er. Entomographien, p. 52 (1840).
*Hapalochrous festivus*, Pic, Mélanges exot.-entom. iv. p. 3 (Sept. 1912).

♂. Antennæ simply serrate, long; anterior tibiæ excavate towards the apex within, the apical portion thickened; anterior tarsal joints 1 and 2 stout, equal in length, 2 with a black comb at the apex; intermediate femora simple; intermediate tibiæ (Pl. VIII. fig. 3) strongly incrassate, convex above, concave beneath, broadly, arcuately dilated towards the apex within, and then very deeply excavate between this and the tip; antennæ and legs testaceous, the apices of the former, and the tarsi in part, slightly infuscate, the posterior femora black or metallic at the apex.

*Hab.* W. Africa, Senegal (*Mus. Brit.*: ♂), Gaboon (*Mus. Oxon.*: ♂).

The ♂ of this species (if correctly named in the British Museum) is apparently undescribed, the ♀ type from Senegal having darker legs, as is often the case in the present genus. An elongate insect, with the head and prothorax metallic green, and the elytra testaceous, with a large patch on the disc below the base, and a common broad subapical fascia, green.

Pic (Mélanges exot.-entom. xxx. p. 11, 1919) includes *H. festivus*, Er., and its allies in a new subgenus, *Cladapalochrus*; but he has presumably incorrectly identified the ♂ of *H. festivus*, which has simply serrate (not flabellate) antennæ in that sex, as in *H. longior*.

*H. senegalensis*, Pic (type ♂, with flabellate antennæ, 1912), and *H. viridipes*, Pic (type ♀, 1912), from W. Africa, and *H. degeorgisi*, Pic (type ♀, 1914), from the Congo, are maculate forms that do not seem to be represented in the collections before me.

### 6. *Hapalochrus sjöstedti.*

*Hapalochrus sjöstedti*, Bourg. in Sjöstedt's Kilimandjaro-Meru Exped. i. Abt. 7, No. 10, p. 132, t. 3. fig. 15 (♂) (1908) (nec *Apalochrus sjöstedti*, var. *diversipes*, Pic, Mélanges exot.-entom. xxxi. p. 10, Oct. 1919).
Var. *Hapalochrous simplicipes*, Pic, Ann. Soc. Ent. Belg. liii. p. 193 (♂) (1909).

♂. Moderately elongate, shining, somewhat thickly clothed with fine, semi-erect, whitish hairs; cæruleous, bluish-green, or violaceous, the antennæ black, with the two basal joints entirely or in part testaceous; the anterior and intermediate legs wholly or in part (usually black along their

outer aspect), and sometimes the posterior tarsi also, testaceous, the rest of the legs metallic or black, the abdomen almost entirely reddish or testaceous. Head broad, closely punctulate, smoother at the base; antennæ long, stout, pectinate from the fourth joint onward. Prothorax transverse, subtrapezoidal as seen from above, at the base as wide as the elytra, sparsely punctulate, smooth on the middle of the disc. Elytra widened posteriorly, densely, rather finely, rugulosely punctate, the puncturing a little coarser in specimens from Kilimandjaro and Kenya. Anterior femora incrassate, toothed at the middle; anterior tibiæ simply excavate towards the apex within (thus appearing strongly sinuate), without projecting lobe at the middle; anterior tarsal joints 1 and 2 thickened, 2 projecting over 3, nigro-pectinate at tip; intermediate tibiæ simple.

♀. Antennæ short, rather stout, serrate; legs, and abdomen in part, metallic or black, the anterior femora without tooth and sometimes testaceous.

Length $4\frac{1}{4}$–6, breadth 2–$3\frac{1}{10}$ mm. (♂ ♀.)

*Hab.* E. and W. Central Africa, Kilimandjaro and Meru (*Dr. Sjöstedt*: types of *H. sjöstedti*: ♂ ♀), S. foot of Mt. Elgon and S.E. slopes of Kenya, alt. 5100–7000 ft., Koki Country, S.W. Buddu, Banks of Nile near Kakindu, Bugoma Forest in Unyoro, Upper Kuja Valley in S. Kavirondo, and E. Busoga in Uganda (*S. A. Neave*), Tero Forest in Uganda (*C. C. Gowdey*); Belgian Congo (type of *H. simplicipes*: ♂), Vivi, Léopoldville, Congo da Lemba, Amadi, Itoka, and between Beni and Lesse (*Mus. Congo Belge*), Congo (*coll. Bourgeois*); W. Africa, Ibadan in S. Nigeria (*A. W. J. Pomeroy*), Ashanti District (*A. E. Evans*).

The above description was drawn up from a short series in the British Museum before the types (♂) of Bourgeois and Pic had been forwarded to me by Dr. Sjöstedt and M. Schouteden for comparison: *H. sjöstedti* has the elytra a little more coarsely punctured than *H. simplicipes*, but no other difference can be detected. There are about thirty specimens of *H. simplicipes*, Pic (including the type), in the Congo Museum, the sexes in about equal numbers. The females are separable from those of various similarly coloured *Hapalochri* by the basally widened prothorax.

### 7. *Hapalochrus trapeziderus*, sp. n.

♂. Moderately elongate, shining, albo-pilose; green or brassy green, the antennæ and legs black or metallic, the

basal joint of the antennæ beneath, the anterior and intermediate femora in part, and the anterior tibiæ on their inner aspect, testaceous, the abdomen in great part red. Head broad, closely punctulate; antennæ long, stout, pectinate from the third joint onward. Prothorax broad, as wide as the elytra at the base, subtrapezoidal as seen from above, sparsely punctulate, smooth and canaliculate on the middle of the disc. Elytra widened posteriorly, densely, rugosely punctate; the apices almost smooth, dehiscent, compressed and angulate at some distance from the sutural angle (? abnormally formed). Anterior femora incrassate, toothed at the middle beneath; anterior and intermediate tibiæ strongly sinuate, the latter deeply excavate near the apex within; anterior tarsal joints 1 and 2 thickened, subequal in length.

♀. Antennæ rather short, not very stout, feebly serrate, their joints 1–3, and the anterior and intermediate femora to near the apex, testaceous; abdomen red; anterior femora without tooth.

Length $4\frac{3}{4}$–$6\frac{1}{2}$, breadth $2\frac{1}{2}$–$3\frac{1}{5}$ mm. (♂ ♀.)

*Hab.* E. Africa, Njoro (*R. H. Deakin*: ♂: vi. 1914), Ruiru (*T. J. Anderson*: ♀: xi. 1917).

One pair, the ♂, type, labelled as having been found in the cocoon of a "bagworm" (Psychid moth), the ♀ much smaller, the two sexes with similarly-coloured legs. Separable from *H. sjöstedti* by the apically emarginate intermediate tibiæ and the darker legs of the male, and the partly testaceous anterior and intermediate femora of the female, the male relatively broader.

### 8. *Hapalochrus simoni.*

? *Hapalochrus simoni*, Pic, Melanges exot.-entom. v. p. 6 (♂) (March 1913).

♂. Moderately elongate, convex, shining, somewhat thickly clothed with fine, whitish, semi-erect hairs; cæruleous, the antennæ (the slightly infuscate apical joints excepted), palpi, labrum, and legs testaceous, the abdomen rufotestaceous. Head broad, closely punctate; antennæ moderately long, stout, pectinate from the fourth joint onward. Prothorax transverse, convex, laterally compressed, subtrapezoidal (as seen from above), sparsely punctate, impressed before the base. Elytra very little broader than the prothorax, widened posteriorly, densely, rugulosely, rather finely punctate. Anterior femora (Pl. VIII. fig. 1) incrassate, toothed at the middle beneath; anterior tibiæ (Pl. VIII.

fig. 1) twisted and dilated obliquely into a short, stout, convex lobe at about the middle above, the lobe concave beneath, the outer portion of the tibia narrow and compressed ; anterior tarsal joints 1 and 2 thickened, subequal in length, 2 projecting over 3 and nigro-pectinate at the tip ; intermediate tibiæ rather slender, slightly sinuate within.

Length 4½, breadth 2¼ mm.

*Hab.* W. Africa, Gold Coast (*A. E. Evans*), Quingua (*E. Simon, type of Pic*).

A ♂ from the Gold Coast, received by the British Museum in 1913, is apparently referable to *H. simoni*. A bright blue, rather convex, albo-pilose insect, with the antennæ, legs, and abdomen testaceous, the antennæ pectinate, the anterior femora toothed and incrassate, the anterior tibiæ twisted and shortly, obliquely lobed at the middle, the intermediate tibiæ slender and sinuate within. A much larger ♀ (length 6¼, breadth 3¼ mm.), from Sierra Leone, in the same collection, may belong to the present species : it has however, the antennæ (except the basal joint beneath) and legs black, and the head and the sides of the prothorax more densely punctured. The ♂ is separable from that of *H. sjöstedti* (*simplicipes*, Pic) by the testaceous legs and antennæ, the mesially dilated anterior tibiæ, and the more convex body. *H. pectinatus*, Pic (1911), type ♂, from Shirati, is an allied form with pectinate antennæ in ♂. The locality "Quingua" cannot be traced on any map available to myself.

9. *Hapalochrus lobipes*, sp. n.

♂. Extremely like *H. sjöstedti*, Bourg., var. *simplicipes*, Pic, and similarly coloured—green, with the anterior and intermediate legs, the antennæ in part, and the abdomen testaceous ; the anterior tibiæ (Pl. VIII. fig. 6) strongly bifurcate at the middle, the outer lobe long, broad, rounded at the tip, the inner compressed distal portion of the tibia narrow ; the anterior femora (Pl. VIII. fig. 6) toothed at the middle ; the elytral puncturing rather fine.

Length 5½, breadth 3 mm.

*Hab.* W. Central Africa, Tolo, Belgian Congo (*Dr. J. Maes, in Mus. Congo Belge* : xii. 1913).

One male. The lobe of the anterior tibiæ is more developed in this insect than in any other *Hapalochrus* before me, *H. simoni* forming a sort of connecting-link between *H. simplicipes* and *H. lobipes*. A distinctive name is therefore required for the specimen from Tolo.

10. *Hapalochrus dasytiformis*, sp. n.

♂. Moderately elongate, narrow, parallel-sided, shining, clothed with whitish pubescence intermixed with long, soft, erect, pallid hairs; nigro-æneous or black, the basal joints of the antennæ beneath, the mandibles (except at the tip), tibiæ, and tarsi (their apices excepted) testaceous. Head broad, sparsely punctured; antennæ moderately long, strongly pectinate. Prothorax strongly transverse, convex, about as broad as the base of the elytra, rounded at the sides, very sparsely punctate, foveate or sulcate in the middle posteriorly. Elytra closely, finely punctate, depressed along the suture anteriorly, the interspaces alutaceous and uneven. Anterior femora (Pl. VIII. fig. 2) strongly incrassate, toothed towards the base; anterior tibiæ (Pl. VIII. fig. 2) thickened and rather broad, abruptly, obliquely compressed and emarginate before the tip; anterior tarsal joints 1 and 2 thickened, 2 smaller and much shorter than 1, extending over the base of 3, nigro-pectinate at tip; intermediate tibiæ simple, as in ♀.

♀. Antennæ shorter and more slender, serrate, black.

Length $3\frac{1}{5}$–4, breadth $1\frac{1}{2}$–$1\frac{2}{3}$ mm. (♂ ♀.)

*Hab.* S.E. Africa, Howick, Natal (*J. P. Cregoe*).

Five males and one female, received by the British Museum in 1903. A small, narrow, hairy, nigro-æneous or black form, with testaceous tibiæ and tarsi, and a broad, transverse prothorax, the ♂ with flabellate antennæ, incrassate, toothed anterior femora (as in *H. sjöstedti*, Bourg.), thickened and obliquely compressed anterior tibiæ, &c. The ♀ is separable from the same sex of the Rhodesian *H. dollmani* (No. 58) by its smaller size, less elongate shape, shorter prothorax, and more distinctly, less densely punctate elytra.

11. *Hapalochrus atratus*, sp. n.

♂. Moderately elongate, narrow, shining, sparsely pubescent and also thickly clothed with long, soft, erect, fuscous hairs; black, the elytra with a faint cyaneous lustre, the basal joints of the antennæ and the anterior tibiæ slightly testaceo-maculate. Head short, bi-impressed anteriorly, sparsely punctulate; antennæ moderately long, strongly pectinate from the fourth joint onward. Prothorax transverse, sulcate down the middle, sparsely punctate. Elytra subparallel, depressed along the suture below the base, closely, finely punctate. Anterior femora (Pl. VIII. fig. 5) armed with a long sharp tooth near the base; anterior

tibiæ (Pl. VIII. fig. 5) strongly sinuate, compressed, dilated to beyond the middle, the apical portion abruptly, obliquely narrowed ; anterior tarsal joints 1 and 2 slightly thickened, 2 extending over the base of 3 ; intermediate tibiæ simple, as in ♀.

♀. Antennæ much shorter, not so stout, sharply serrate ; elytra widened posteriorly ; legs wholly black.

Length 3–4¼, breadth 1⅕–2 mm. (♂ ♀.)

*Hab.* E. Africa, Mwengwa [i., ii. 1914] and Kashitu [i. 1915] in N.W. Rhodesia (*H. C. Dollman*).

A long series, the sexes in about equal numbers, all but one from Mwengwa. A small, narrow, shining black form, the elytra with a faint bluish lustre, the ♂ with subparallel elytra, strongly pectinate antennæ, sharply toothed anterior femora, twisted and dilated anterior tibiæ, and simple intermediate tibiæ. In the ♂ of this insect the long tooth on the front legs arises from near the base of the femora, not from the trochanter as usual (when present) in the present genus.

### 12. *Hapalochrus ramulosus*, sp. n.

♂. Moderately elongate, narrow, subparallel, shining, finely pubescent, with long, erect hairs intermixed ; brassy-cupreous or golden-green, the antennæ and femora black, the basal joints of the former beneath, and the mouth-parts, tibiæ, tarsi in great part, and ventral sutures testaceous. Head densely, rugosely punctate ; antennæ long, strongly pectinate. Prothorax transverse, rounded at the sides, closely, finely punctate on the disc, the lateral portions rugose. Elytra subparallel, flattened on the disc, densely, finely, rugosely punctate. Anterior tibiæ simple ; anterior tarsal joints 1 and 2 rather elongate, slightly thickened, 2 produced above and nigro-pectinate at the tip ; intermediate tibiæ gradually widened to about the middle and narrowing thence to the apex.

*Var.* Posterior tibiæ entirely, and the other tibiæ at the apex, black. (♂.)

♀. Antennæ short, serrate ; elytra widened posteriorly ; tibiæ in their outer half, and the tarsi almost entirely, black.

Length 4–4½, breadth 1½–1⅘ mm. (♂ ♀.)

*Hab.* E. Africa, Kafue River, Namwala, N. Rhodesia (*H. C. Dollman* : ♂ ♀ : iii. 1913), Nyasa (*Thelwall, in Mus. Brit.* : ♂).

One pair from Rhodesia (types) and a ♂ from Nyasa. A narrow, brassy-cupreous or golden-green form, with the

head, the sides of the prothorax, and the elytra rugosely punctured, the ♂ with pectinate antennæ, simple anterior tibiæ, and slightly thickened, partly testaceous intermediate tibiæ. The legs, as is often the case in the present genus, vary in colour, the Nyasa ♂ having the posterior pair entirely, and the anterior and intermediate tibiæ at their apices (as in the Rhodesian ♀), black. The Nyasa specimen (♂) was received at the British Museum in 1877. *H. ramulosus* seems to be allied to *H. pectinatus*, Pic (1911), types (♂ ♀) from Shirati, E. Africa; but as the latter is described as bluish-black in colour, and the narrow shape is not mentioned, the two insects are scarcely likely to be conspecific.

### 13. *Hapalochrus abyssinicus.*

*Hapalochrus abyssinicus*, Harold, Monatsb. Akad. Wiss. Berl. 1878, p. 219 (♂ ♀).
*Hapalochrous major*, Pic, Ann. Soc. Ent. Belg. li. p. 385 (1907) (♂).

♂. Extremely like the same sex of *H. elgonensis*, but a little larger and more robust, the head narrower than the prothorax, the latter relatively broader, the colour still more variable—golden-green, or in part cyaneous, the elytra rarely brassy-cupreous, the basal joints of the antennæ, the palpi (except at the tip), and all the tibiæ and the basal joint of each tarsus (as well as the epistoma and labrum) wholly testaceous in nearly all the specimens from N.W. Rhodesia, the intermediate tibiæ always in great part testaceous, the sides of the abdomen rufescent; the puncturing of the elytra finer and denser; the epistoma similarly swollen and almost smooth, but with the oblique lateral portions somewhat curved; anterior tibiæ slightly hollowed towards the apex within; intermediate femora curved; intermediate tibiæ (Pl. VIII. fig. 4) greatly swollen, convex and broad to very near the apex above, deeply excavate within, angulate on their lower outer edge at about the middle, and furnished with a dentiform, matted tuft of hairs near the inner apical angle.

♀. Head metallic to the anterior margin, the epistoma flattened; antennæ (except at the base beneath) and legs sometimes black or metallic, the tibiæ testaceous in the Kasitu examples, the antennæ much shorter than in ♂.

Length 7–8½, breadth 3¼–3¾ mm. (♂ ♀.)

*Hab.* W.C. Africa, Moliro and Mpala (*Duvivier*; type of Pic: ♂), Road from Luena, Sassa, and Amadi, Congo (*Mus. Congo Belge*: ♂); E. Africa, Ndala Mission, 33° 15′ E., 4° 45′ S. (*Dr. G. H. Carpenter*: xii. 1916—

i. 1917 : ♂), Yala River, S. edge of Kakumga Forest, alt. 4800–5300 ft. [♂], Nyangori in N. Kavirondo, alt. 4800 ft. (*S. A. Neave* : v. 1911 : ♂), Mlanje [i. 1913 : ♂] and between Mangoche and Chikala Boma, alt. 4000 ft. [iii. 1910 : ♀], in Nyasaland (*S. A. Neave*), Kashitu and Namwala in N.W. Rhodesia (*H. C. Dollman* : iii. 1913, xi., xii. 1914, i. 1915 : ♂ ♀) ; Abyssinia (*types of Harold* : ♂ ♀).

The above description is taken from a series of fourteen males and four females belonging to the British Museum. The males agree with a specimen of *H. major* from the Congo named by Pic, and they are separable from the same sex of *H. elgonensis* by the form of the intermediate tibiæ, which are convex and broad to very near the apex above, and have the dentiform tuft of matted hairs placed near the tip. The tibiæ and the basal joints of the antennæ and tarsi vary in colour, these portions of the legs being wholly or in great part testaceous in the Rhodesian series received from the late H. C. Dollman. The colour of the upper surface, too, is variable, as stated by Harold, the elytra being brassy cupreous in a pair from Nyasaland. Dr. Gestro has lent me a ♀ from Abyssinia agreeing with Harold's diagnosis and with the other specimens before me of the same sex, and the only discrepancy between the description of the Congo insect and the one from Abyssinia is that Harold did not state that the yellowish anterior border of the head (epistoma) was swollen. *H. opulentus*, Péring. (1892), types, ♂ ♀, length 8–9 mm., from N. Ovampoland, is an allied form with the head wholly green in ♂*.

### 14. *Hapalochrus elgonensis*, sp. n.

♂. Moderately elongate, robust, shining; cyaneous, green, or golden-green, the palpi and joints 2–10 of the antennæ black, joints 1–3 of the latter testaceous beneath, 1 with a green streak above, the epistoma and labrum, the excavate inner portion of the intermediate tibiæ (including the pencil of hairs), and the abdomen at the sides and middle anteriorly, testaceous or rufescent ; clothed with shaggy whitish pubescence intermixed with numerous long, fine, pallid, erect hairs. Head nearly as wide as the prothorax, densely, very finely punctate, and deeply, transversely depressed between the eyes, smoother at the base, the epistoma swollen and almost impunctate (the tumid space forming a ⌐¬-shaped flavescent ridge between the bases of the antennæ) ; antennæ subserrate, long, rather stout, joints 2–9

* The type has recently been lent me by Dr. Peringuey for comparison.

elongate. Prothorax much broader than long, very sparsely punctulate, deeply, transversely grooved before the base. Elytra long, flattened on the disc anteriorly, gradually widened posteriorly, bluntly rounded at the apex; densely, finely, rugosely punctate. Anterior tibiæ rather slender, hollowed towards the apex within; anterior tarsal joints 1 and 2 thickened, 2 extending over 3; intermediate femora concave beneath, slightly curved; intermediate tibiæ (Pl. VIII. fig. 8) greatly swollen, convex above, rounded externally, deeply excavate and sinuate within, and furnished with a matted, dentiform tuft of hairs at a little behind the middle.

♀. Head metallic to the anterior margin, the epistoma flattened, the transverse depression shallower; antennæ much shorter; legs wholly metallic.

Length 6–7, breadth $2\frac{3}{4}$–3 mm. (♂ ♀.)

*Hab.* E. Africa, S. foot and slopes of Mt. Elgon, alt. 5100–5800 ft. [♂ ♀ : 8–13. vi. 1913], and Siroko River, near W. foot of Mt. Elgon, alt. 3600 ft., in Uganda [♀ : 12–14. viii. 1911] (*S. A. Neave*).

Thirty-one specimens, three only of which are males. Recognizable in this sex by the tumid, flavescent epistoma, and the greatly swollen curved intermediate tibiæ, which bear a matted dentiform tuft of testaceous hairs near the middle. A close ally of *H. abyssinicus* and *H. constrictipes*, the only other allied forms known to me with a flavescent tumid epistoma in ♂, this character separating *H. elgonensis* from the same sex of *H. malachioides*, the epistoma in the latter being flattened.

### 15. *Hapalochrus constrictipes*, sp. n.

♂. Elongate, robust, shining; green, the head, prothorax, and base and sides of the elytra tinged with cyaneous, the epistoma, labrum, basal joint of antennæ, palpi (except at tip), anterior and intermediate femora (except a streak on the anterior pair above) and tibiæ, posterior femora at the base and the tibiæ in part, and the ventral surface (except down the middle), testaceous; thickly clothed with shaggy whitish pubescence intermixed with long, erect, pallid hairs. Head narrower than the prothorax, densely, very finely punctate and transversely depressed between the eyes, smoother at the base, the epistoma greatly swollen and almost impunctate (the lateral portions forming a prominent, oblique, flavescent ridge on

each side before the eyes); antennæ moderately long, subserrate. Prothorax transverse, sparsely punctured, smoother on the middle of the disc. Elytra much widened posteriorly, blunt at the tip; densely, rugulosely punctate, the punctures coarser at the base. Anterior tibiæ strongly sinuate within; anterior tarsal joints 1 and 2 thickened, 2 extending over 3, nigro-pectinate at tip; intermediate tibiæ (Pl. VIII. fig. 10) greatly swollen, convex above, deeply excavate within, abruptly constricted towards the apex (thus appearing angulate beyond the middle externally and subdentate at the tip beneath), and furnished with a matted, dentiform, tuft of hairs (followed by another smaller tuft) beyond the middle.

Length $7\frac{1}{2}$–8, breadth $3\frac{1}{4}$–$3\frac{1}{3}$ mm.

*Hab.* W. Central Africa, Bondaye, Kamerun (*Mus. Brit.*). Limbala, Belgian Congo (*Dr. Rodhain, in Mus. Congo Belge*: 5. viii. 1913).

Two males, the one from Bondaye captured on May 27th, 1914. Separable from the same sex of *H. abyssinicus* (=*major*, Pic) and *H. elgonensis* by the apically constricted, externally angulate intermediate tibiæ, the dentiform tuft of hairs on their inner aspect placed in the same position as in *H. elgonensis*. A ♀ from Kambove, Katanga (*S. A. Neave*), cupreous above, and another from Welgelegen, Belgian Congo (*Dr. Bequaert*), green, with the sides of the elytra violaceous, probably belong to the same species. These three forms agree in having a tumid, flavescent, almost smooth epistoma in ♂.

### 16. *Hapalochrus malachioides*.

*Hapalochrus malachioides*, Fairm. Ann. Soc. Ent. Fr. 1887, p. 159.
*Hapalochrous conradti*, Pic, *in litt.* (?).

♂. Elongate, robust, shining; green, with the prothorax or base of the elytra suffused with violaceous or cyaneous, the bluish colour sometimes extending to the apex of the latter, the epistoma, mouth-parts, palpi (except at tip), the antennal joints 1–3 (except a dark streak along their upper face), the anterior tarsi at the base, the anterior tibiæ in part, the intermediate femora beneath, the intermediate tibiæ except along their outer face, and sometimes the ventral segment to a greater or lesser extent, testaceous: clothed with whitish pubescence intermixed with long, erect hairs. Head about as wide as the prothorax, transversely depressed and feebly canaliculate between the eyes, densely, finely punctate, smoother at the base, the epistoma flattened;

antennæ very long, feebly serrate. Prothorax transverse, rounded at the sides, sparsely, finely punctate, smoother on the disc. Elytra widened posteriorly, densely, rather coarsely, rugulosely punctate, the puncturing coarser and more diffuse at the base, the apices rounded. Anterior tibiæ hollowed in their outer half within (appearing thickened at the tip); anterior tarsal joints 1 and 2 thickened, 2 extending over 3, nigro-pectinate at tip; intermediate tibiæ (Pl. VIII. fig. 11) greatly swollen, convex and rounded externally, furnished with a broad, thin, rounded flavo-ciliate lamella on their inner face beyond the middle, and deeply excavate above and beneath this, the lower, outer edge (as seen from beneath) biangulate.

♀. Head metallic to the anterior margin; antennæ much shorter; legs wholly metallic.

Length $6\frac{1}{4}$–$7\frac{1}{2}$, breadth $2\frac{1}{2}$–$3\frac{1}{2}$ mm. (♂ ♀.)

*Hab.* E. and E. Central Africa: Tabora (*type of Fairmaire*), Mitiana—Entebbe, Yala River, S. edge of Kakumga Forest, S. foot and slopes of Mt. Elgon, Koki Country, S.W. Buddu, N. of L. Isolt, valley of Kafu River, Unyoro, Ilala, Maramas District, Upper Kuja in S. Kavirondo, alt. 3400–5800 ft. (*S. A. Neave*), Entebbe, Mwera (*C. C. Gowdey*); W. Central Africa, Bondaye, Babua, Kongola Kunde, Kamerun (*Mus. Brit.*); Congo da Lambra, Amadi, Kisantu, Kibombo, Belgian Congo (*Mus. Congo Belge*).

This insect seems to be referable to *H. malachioides*, Fairm., the type of which (♀) was from Tabora, and there are specimens of it (♂ ♀) in the Congo Museum thus identified by Pic, as well as others named by him *H. conradti*. The Congo Museum also possesses a series of about 150 examples of it, including 70 males, taken by Mr. R. Mayné in 1913 at Congo da Lemba, and there are many others from Uganda, Kamerun, &c., in the British Museum. The ♂ of the present insect is recognisable by the very long antennæ, the flavescent, flattened epistoma, and the ciliate flavo-unilamellate intermediate tibiæ, the tibiæ themselves being greatly swollen. The ♀ ♀ of *M. malachioides* and its allies, all of which have the head metallic to the anterior margin, are scarcely distinguishable one from another.

17. *Hapalochrus uncinatus*, sp. n.

♂. Elongate, widened posteriorly, shining; green, the anterior portion of the head and the sides of the prothorax golden-green, the elytra tinged with cyaneous at the sides and base, the labrum, the outer angles of the epistoma, the

basal joints of the antennæ beneath, the palpi (except at the tip), the trochanters, the femora at the base or beneath, the intermediate tibiæ within, and the abdomen in part, testaceous; clothed with whitish hairs intermixed with long, erect, blackish setæ. Head densely punctulate and transversely depressed anteriorly, much smoother at the base; antennæ long, slender. Prothorax nearly as long as broad, sparsely punctate on the disc, rugulose at the sides. Elytra densely, rugulosely punctured. Anterior tibiæ abruptly, subarcuately dilated and compressed in their apical third; anterior tarsal joints 1 and 2 stout, 2 extending over 3; intermediate tibiæ (Pl. VIII. fig. 12) curved, enormously thickened, rounded and convex externally, abruptly narrowed at the apex, very deeply excavate within and deeply sinuato-sulcate along the median third above, the upper inner edge armed at the middle with a stout, compressed, forwardly-directed, acute hook, and the lower inner edge arcuately lamellate opposite this.

Length $6\frac{1}{5}$, breadth $3\frac{1}{5}$ mm.

*Hab.* W. Central Africa, Katalla, Belgian Congo (*Dr. Rodhain, in Mus. Congo Belge*): 10. i. 1911.

One male. Very near the insect here identified as *H. spectabilis*, Ancey, but readily distinguished from the ♂ of that species by the stout, chitinous hook at the middle of the inner edge of the intermediate tibiæ, the corresponding appendage being formed by a tuft of matted hairs in *H. elgonensis*, *abyssinicus*, and *constrictipes*, and by a thin ciliated lamella in *H. malachioides*.

18. *Hapalochrus bilamellatus*, sp. n.

♂. Elongate, robust, shining; golden-, brassy-, or bluish-green, the elytra sometimes suffused with cyaneous at the base or sides, the labrum, the basal joint of the antennæ on its outer edge, the intermediate tibiæ on its inner aspect from the middle to the apex, and the abdomen in part, testaceous; clothed with whitish pubescence intermixed with numerous long, erect hairs. Head densely punctulate and transversely depressed anteriorly, smoother at the base; antennæ moderately long, rather strongly serrate from the fifth joint onward. Prothorax transverse, sparsely punctulate. Elytra much widened posteriorly, bluntly rounded at the apex, densely, finely, rugulosely punctate. Anterior tibiæ slightly hollowed at about the middle within; anterior tarsal joint 2 much longer than 1, thickened and pectinate at tip; intermediate tibiæ (Pl. VIII. fig. 13) swollen, strongly curved, convex externally, deeply excavate on their inner

aspect, the upper and lower edges of the cavity arcuately dilated at the middle, the dilated upper portion extending for some distance inward, sinuate-plicate, and very deeply excavate, the lower portion narrower and less prominent.

♀. Antennæ very much shorter and a little stouter; legs wholly metallic.

Length $6\frac{1}{4}$–7, breadth $2\frac{9}{10}$–$3\frac{1}{5}$ mm. (♂ ♀.)

*Hab.* E. Africa: Nandi Escarpment [type], Yala River, south edge of Kakumga Forest, and Valley of the Upper Nzoia River, N. Kavirondo, alt. 4800–5800 ft. (*S. A. Neave*: v., vi. 1911); Luwumbu Valley, Upper Luangwa, alt. 2500–3500 ft. [vii. 1910], and Serenje District, alt. 4500 ft. [xii. 1907], both in N.E. Rhodesia (*S. A. Neave*); Kashitu in N.W. Rhodesia (*H. C. Dollman*: xii. 1914). Central Africa: Kundelungu, Belgian Congo (*Dr. Bequaert, in Mus. Congo Belge*: ♂).

Numerous examples, including seven males, two of which are from Rhodesia. These males differ from the same sex of the Usagara insect here referred to *H. spectabilis*, Ancey, in having the antennæ more strongly serrate, the prothorax more rounded at the sides, and the lamella on the upper inner edge of the intermediate tibiæ broader and more prominent than the lower one, the inner margin only of the former testaceous.

19. *Hapalochrus cochleatus*, sp. n.

♂. Very like, and possibly a form of, *H. bilamellatus*, but differing chiefly in the development of the intermediate tibiæ (Pl. VIII. fig. 14), the lower lamella of which is larger and more angular, and the upper one narrow, more or less angulate proximally, and sinuato-plicate and deeply sulcate above; the antennæ, too, are a little longer, and have the apical joint strongly curved and more elongate.

Length $6\frac{1}{5}$–7, breadth $2\frac{4}{5}$–$3\frac{1}{2}$ mm. (♂ ♀.)

*Hab.* E. and W. Central Africa, Mwengwa [type] and Kashitu, N.W. Rhodesia (*H. C. Dollman*: xi., xii. 1913, xi., xii. 1914, i. 1915: ♂ ♀), Serenje, N.E. Rhodesia (*S. A. Neave*: xii. 1907); Babua Bondaye, Kongola Kunde, Kamerun (*Mus. Brit.*); Mufungwa Sampwe (*Dr. Bequaert*), Sankisia, Belgian Congo (*Dr. Rodhain, in Mus. Congo Belge*: ♂).

Twenty specimens, including males from each district. In this insect the two lamellæ of the ♂ intermediate tibiæ, viewed from above, appear to be placed one before the other, the narrow angulate portion of the upper one issuing at

about one-third from the base. The females of these closely allied forms are scarcely distinguishable *inter se*; some of those from Serenje are very hairy and closely resemble the same sex of *H. abyssinicus*, from which they are separable by their smaller size, and shorter elytra and antennæ.

### 20. *Hapalochrus spectabilis.*

? *Apalochrus spectabilis*, Ancey, Nat. Sicil. ii. p. 116 (1883).

♂. Elongate, robust, shining; bluish-green or cyaneous, the elytra sometimes with a large violaceous patch on the outer part of the disc, the mouth-parts, the outer angles of the epistoma, the basal joints of the antennæ beneath, the anterior and intermediate tibiæ within, the intermediate femora beneath, and the ventral segments in great part, testaceous; clothed with whitish pubscence intermixed with long, erect, darker hairs. Head somewhat densely punctulate and transversely depressed anteriorly, smoother at the base; antennæ long, rather slender, feebly serrate. Prothorax broader than long, subrotundate, very sparsely punctulate. Elytra long, much widened posteriorly, flattened on the disc, densely, rugulosely punctate, the apices bluntly rounded. Anterior tibiæ sinuate, excavate in their outer half within, the apical portion (as seen from behind) abruptly widened for some distance; anterior tarsal joints 1 and 2 thickened, 2 extending over 3; intermediate tibiæ (Pl. VIII. fig. 15) greatly swollen, convex and rounded externally, deeply excavate within, the upper and lower edges of the cavity dilated behind the middle into a prominent rounded lamella, the upper one sinuato-plicate and also deeply excavate above.

♀. Antennæ a little stouter and much shorter; prothorax more transverse: the head entirely, legs, and sometimes the abdomen also, metallic.

Length $6\frac{1}{5}$–$6\frac{3}{4}$, breadth $2\frac{4}{5}$–$3\frac{1}{2}$ mm. (♂ ♀.)

*Hab.* E. Africa, Road to Kilossa, Usagara District, alt. 1500 to 2500 ft. (*S. A. Neave*): 22–26. xii. 1910).

Six males and five females, found by Dr. Neave, are provisionally referred to this species, the types (? ♀ ♀) of which were from Usagara. Ancey does not mention the sexual characters and gives no measurements; he compares his insect with *H. festivus*, Er., from W. Africa, and states that it is one of the largest of the Malachiids. The colour is variable, above and beneath. This is one of several species with bi-lamellate, swollen intermediate tibiæ in ♂, the tibiæ themselves being greatly swollen in the present insect.

21. *Hapalochrus nitens.*

*Apalochrus nitens*, Gorh. Ann. & Mag. Nat. Hist. (7) v. p. 79 (♂ ♀) (1900).

♂. Antennæ elongate, rather slender, strongly serrate from joint 4 onward; anterior tibiæ slightly hollowed towards the apex within, the apical portion rather broad; anterior tarsal joints 1 and 2 elongated, 2 thickened and nigro-pectinate at the apex; intermediate tibiæ (Pl. VIII. fig. 16) greatly swollen, curved, convex externally, deeply excavate within, the upper and lower edges of the cavity strongly, subequally, arcuato-lamellate at about the middle, the upper lamella sinuato-plicate and also deeply excavate.

♀. Antennæ a little stouter, feebly serrate, short; legs usually much darker, the anterior and intermediate pairs (the bases of the tarsi included) often wholly or in great part testaceous in ♂.

Length (head extended) 5½–6, breadth 2¼–2½ mm. (♂ ♀.)

*Hab.* E. and S.E. Africa: Mwengwa in N.W. Rhodesia (*H. C. Dollman*: i., ii. 1914); Fort Jameson District, alt. 4000 ft. in N.E. Rhodesia (*S. A. Neave, in Mus. Oxon.*: viii. 1908); Bulawayo [xii. 1903] and Salisbury [i. 1899] (*G. A. K. Marshall*).

The long series, ♂ ♀, obtained by Dr. Marshall and the late H. C. Dollman, the males agreeing perfectly in their structure, vary greatly in the colour in the body (golden-green, green, cyaneous or violaceous, some examples having the head and prothorax green and the elytra cyaneous) and legs, many of the Rhodesian females (but not all of them) having these limbs darker than those from the other localities. Gorham briefly described the sexes, but his definition "erosis" of the ♂-intermediate tibiæ gives one no idea of the bilamellate structure. Some of the specimens are labelled as having been found on grass-seeds. Compared with *H. bilamellatus* and other allied forms with somewhat similar ♂-characters, *H. nitens* is a relatively narrower, smaller insect. A ♀ from Kambove, Katanga (*S. A. Neave*), may also belong here.

22. *Hapalochrus clavicornis*, sp. n.

♂. Moderately elongate, cyaneous, the head and prothorax bluish-green in one example, the basal joint of the antennæ beneath, a space at the middle of the anterior tibiæ, and the base of the intermediate femora narrowly, testaceous, the rest of the antennæ and legs (the claws excepted) black or metallic,

the abdomen partly red ; clothed with fine pubescence intermixed with longer, semi-erect, pallid hairs. Head about as wide as the prothorax, rather sparsely punctulate, sulcate down the middle anteriorly, depressed between the eyes, and deeply, transversely excavate on each side posteriorly, the two excavations narrowly separated along the median line ; antennæ moderately long, not very slender, joints 3–9 flattened, parallel-sided, oblong, 10 dilated, flattened, somewhat oval, much wider than 9, bluntly rounded at tip. Prothorax transverse, convex, rounded at the sides, closely punctulate. Elytra widened and rather convex posteriorly, conjointly rounded at the apex, deeply punctate. Anterior tibiæ widened, sinuate, obliquely compressed, and with a narrow diaphanous space on their inner edge, before the tip ; anterior tarsal joints 1 and 2 slightly thickened, long, 2 extending over the base of 3 ; intermediate femora hollowed towards the apex and deeply excavate near the base beneath ; intermediate tibiæ (Pl. VIII. fig. 17) curved, broad, convex above, arcuately dilated at the middle externally and sinuate thence to the tip, deeply excavate at the middle and apex beneath, and furnished with a dentiform pencil of matted pallid hairs at the inner angle, the apex itself toothed beneath.

♀. Antennæ a little more slender ; head densely punctate, simply hollowed down the middle posteriorly and transversely depressed anteriorly ; legs wholly metallic.

Length $4\frac{3}{4}$–$5\frac{1}{4}$, breadth 2–$2\frac{1}{10}$ mm. (♂ ♀.)

*Hab.* E. Africa, Mwengwa [1. i. 1914] and Kafue River, Namwala [iii. 1913], both in N. or N.W. Rhodesia (*H. C. Dollman*).

Two pairs, found on grass. This species may be readily identified by the dilated apical joint of the antennæ in the two sexes, and the deeply excavate head and the very peculiarly-formed intermediate tibiæ in the ♂. *H. cavifrons*, Pic (1913), from the Congo, seems to have the head excavate as in *H. clavicornis*, and antennæ dilated somewhat as in *H. platycerus* (No. 35).

23. *Hapalochrus dilaticornis*, sp. n.

♂. Moderately elongate, clothed with whitish pubescence, the elytra with short semi-erect hairs ; bluish-green, the labrum, palpi, joints 1–5 of the antennæ, anterior and intermediate femora and tibiæ, and posterior tibiæ (except towards the apex), testaceous, the rest of the antennæ and legs black or metallic. Head short, broad, densely punctulate, opaque ; antennæ long, very broadly dilated, joints 4–9

strongly transverse, oblique, 3 triangular. Prothorax convex, transverse, about as wide as the head, obliquely narrowed posteriorly, shining, sparsely, very finely punctulate. Elytra long, a little broader than the prothorax, slightly widened posteriorly, shining, densely, rugulosely punctate, smoother at the base. Anterior trochanters produced into a short point; anterior femora with a small tooth at the base; anterior tibiæ twisted, broadly, obliquely dilated and excavate at the middle; anterior tarsal joints 1 and 2 thickened, 2 extending over 3; intermediate femora broadly excavate at the base beneath; intermediate tibiæ (Pl. VIII. fig. 18) greatly thickened, widening outwards, deeply, abruptly excavate in their apical third within, and furnished with a long, curved, narrow, compressed appendage near the inner angle and a slightly shorter appendage beneath the outer angle, the apex appearing bilobate when viewed from behind.

Length $4\frac{1}{2}$, breadth 2 mm.

*Hab.* W. Africa, Onitsha in S. Nigeria (*J. A. de Gaye*: vii. 1910).

One male. Extremely like *H. testaceicornis*, Pic (1914), a ♂ of which, from Nyangwe on the Congo, named by the author, has been lent me by M. Schouteden; but differing from it in the longer and more broadly dilated antennæ, the testaceous intermediate femora and tibiæ, the tibiæ with longer apical appendages and wanting the fovea beneath, the anterior tibiæ with a broader ear-shaped lobe at the middle. Less elongate than the Rhodesian *H. platycerus*, ♂ (No. 35), the head not so rugose, the antennæ shorter and broadly lamellate from the base, the legs and antennæ partly testaceous.

### 24. *Hapalochrus testaceicornis*.

? *Hapalochrus testaceicornis*, Pic, Mélanges exot.-entom. x. p. 15 (♂) (Oct. 1914).

♂. Antennæ shorter and less dilated than in *H. dilaticornis*, joints 6–9 transverse, 1–6 testaceous, 7–10 black; anterior trochanters produced into an acute tooth; anterior femora with a small tooth at the base; anterior tibiæ broadly dilated and excavate at the middle; anterior tarsal joints 1 and 2 thickened, 2 extending over 3; intermediate femora excavate and testaceous at the base beneath, for the rest black; intermediate tibiæ black, greatly thickened, deeply, abruptly excavate towards the apex within, and with a long, curved, basally-dilated appendage at the inner apical angle and a short tooth below the outer angle, the lower surface deeply foveate beyond the middle.

♀. Antennæ shorter and not so stout, subserrate, joints 1–3 partly or wholly testaceous, the others black; legs black.

*Hab.* W. and E. Central Africa, Fort Sibut, Congo (*type of Pic*), Nyangwe (*Dr. Bequaert*: 29. xi. 1910: ♂, det. Pic), Amadi, Congo da Lemba, Yambata, Léopoldville, Bas-Kasaï, Mayumbé, Wombali, Coquilhatville, Manyema, &c. (*Mus. Congo Belge*: ♂ ♀), W. Ankole in Uganda (*S. A. Neave*: ♀).

The above description of the ♂ is taken from a specimen from Nyangwe named *H. testaceicornis* by Pic, but it does not agree with his diagnosis, in which he gives the antennæ as "non épaissies" and wholly testaceous in colour; a ♀, from Manyema, in the same collection was named by him *H. cribrarius*, Thoms.?, and two others, from Lac Leopold II., *H. azureus*, Er., var. These examples have the head densely rugulose, as he described.

There is a long series of this species in the Congo Museum, including a dozen males and several females, and a ♀ from Uganda in the British Museum seems to belong here.

[To be continued.]

---

## XXIV.—*Descriptions and Records of Bees.*—LXXXIX.

By T. D. A. Cockerell, University of Colorado.

### *Trigona læviceps*, Smith.

Salem, S. India, April 14–16 (*G. R. Dutt*); Addeiley, Nilgiris, 3000 ft., April 26 (*Dutt*); Mangalore, S. Canara, April 18–22 (*Dutt*). I also have it from Java, sent by A. Duchaussoy.

### *Nomada sedi*, Cockerell.

In 'Entomological News,' xxx. p. 292, this was written *sedæ* by an oversight.

### *Habropoda fletcheri*, sp. n.

♂.—Length about 13 mm., unusually slender; tongue about 9 mm.

Black, with the following parts bright lemon-yellow—scape in front, supraclypeal band (with a median upward projection), sides of face up to a little above antennæ, clypeus